

Appl. No. 10/866,771
Amendment dated: May 12, 2005
Reply to OA of: December 21, 2004

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

1(currently amended). A method for forming a shallow trench, said method comprising steps of:

providing a substrate;

forming a plurality of operation layers on said substrate;

forming a photoresist layer on the uppermost one of the operation layers to define a position to be removed;

removing ~~a portion~~ each of the operation layers at said position to form an opening having a sidewall with ripple profile to expose the substrate;

forming a liner layer on the sidewall of the opening, so that the sidewall of the opening having the liner layer formed thereon has a smooth profile; and

removing a portion of the exposed substrate ~~corresponding to the opening to~~ form the shallow trench with smooth profile.

2(original). The method as claimed in Claim 1, wherein the liner layer comprises dielectric material.

3(original). The method as claimed in Claim 2, wherein the liner layer comprises oxide material.

4(original). The method as claimed in Claim 3, wherein the liner layer comprises silicon oxide isolating material.

5(original). The method as claimed in Claim 4, wherein the liner layer comprises TEOS.

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6(original). The method as claimed in Claim 1, wherein the liner layer is formed on the sidewall of the opening by deposition.

7(currently amended). A method for forming a shallow trench, said method comprising steps of:

providing a substrate;

forming a plurality of operation layers on said substrate;

forming a photoresist layer on the uppermost one of the operation layers to define a position to be removed;

removing ~~a portion of~~ the uppermost one of the operation layers at said position to form an opening having a sidewall with ripple profile;

forming a liner layer on the sidewall of the opening so that the sidewall of the opening having the liner layer formed thereon has smooth profile;

removing ~~a portion of~~ the other ones of the operation ~~[[layer]]~~ layers ~~corresponding to~~ at the position of the opening to expose the substrate; and

removing a portion of the exposed substrate ~~corresponding to the opening to~~ form the shallow trench with smooth profile.

8(original). The method as claimed in Claim 7, wherein the liner layer comprises dielectric material.

9(original). The method as claimed in Claim 8, wherein the liner layer comprises nitride material.

10(currently amended). The method as claimed in Claim ~~[[1]]~~ 7, wherein the liner layer is formed on the sidewall of the opening by deposition.